UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,440	08/01/2001	Koichi Maruyama	P21012	4706

7055 7590 04/10/2002

GREENBLUM & BERNSTEIN, P.L.C.
1941 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER
AMARI, ALESSANDRO V

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 04/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/918,440	MARUYAMA, KOICHI	
	Examiner	Art Unit	
	Alessandro V. Amari	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-6 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Broome et al. U.S. Patent 6,088,322.

In regard to claim 1, Broome et al. discloses (see Figure 5) an objective lens for an optical pick-up, at least one surface of said objective lens being an aspherical surface as shown in Figures 5 and 8 and as described in column 5, lines 43-45, said at least one surface being divided into an effective area (25, 26) and an outer area outside said effective area (shown as area outside elements 25, 26 in Figure 5), said effective area and said outer area being formed such that a predetermined gap is caused between a spherical aberration of a light beam passed through said effective area and a spherical aberration of a light beam passed through said outer area as described in column 4, lines 9-26, a diffraction lens structure being formed on said at least one surface within said effective area as described in column 5, lines 43-46, said outer area being connected with a base curve which is a macroscopic shape of said at least one surface within said effective area as shown in Figure 5, the light beam passed through said effective area forming a beam spot on a predetermined surface as shown in Figure 5, the light beam passed through said outer area being diffused on the predetermined

surface in comparison with the beam spot as described in column 7, lines 23-28. Inherently, the beams outside of areas 26 in Figure 5 are no longer focused by diffraction and are therefore focused on a predetermined as compared to the beam spot.

Regarding claim 2, Broome et al. discloses that said diffraction lens structure including a plurality of concentric annular zones formed on said at least one surface as shown in Figure 12.

In regard to claim 6, Broome et al. discloses (see Figure 5) an objective lens for an optical pick-up, at least one surface of said objective lens being an aspherical surface, as shown in Figures 5 and 8 and as described in column 5, lines 43-44, said at least one surface being divided into an effective area (25, 26) and an outer area outside said effective area (shown as area outside elements 25, 26 in Figure 5), a diffraction lens structure being formed on said at least one surface within said effective area as described in column 5, lines 43-46, said outer area being connected with a base curve which is a macroscopic shape of said at least one surface within said effective area as shown in Figure 5, said effective area and said outer area being formed such that the light beam passed through said effective area forming a beam spot on a predetermined surface as shown in Figure 5, the light beam passed through said outer area being diffused on the predetermined surface as described in column 7, lines 23-28. Inherently, the beams outside of areas 26 in Figure 5 are no longer focused by diffraction and are therefore focused on a predetermined as compared to the beam spot.

3. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoo et al. U.S. Patent 6,043,912.

In regard to claim 1, Yoo et al. discloses an objective lens for an optical pick-up as described in column 3, lines 19-20, at least one surface of said objective lens being an aspherical surface as shown in Figure 7, said at least one surface being divided into an effective area (353 or region F in Figure 5A with 353 shown as integrally formed with aspheric lens in Figure 7) and an outer area (355 or region E in Figure 5A) outside said effective area, said effective area and said outer area being formed such that a predetermined gap is caused between a spherical aberration of a light beam passed through said effective area and a spherical aberration of a light beam passed through said outer area as described in column 5, lines 16-21, a diffraction lens structure (see 353 in Figure 5A and as shown in Figure 7) being formed on said at least one surface within said effective area as described in column 6, lines 36-44, said outer area being connected with a base curve which is a macroscopic shape of said at least one surface within said effective area as shown in Figure 7 and as described in column 7, lines 12-19, the light beam passed through said effective area forming a beam spot on a predetermined surface, the light beam passed through said outer area being diffused on the predetermined surface in comparison with the beam spot as described in column 6, lines 1-7.

Regarding claim 2, Yoo et al. discloses that said diffraction lens structure including a plurality of concentric annular zones formed on said at least one surface as

described in column 6, lines 41-42 and as shown integrally formed in Figure 7 which is further described in column 7, lines 13-20.

Regarding claim 5, Yoo et al. discloses that said at least one surface in said outer area is a continuous surface having no diffraction lens structure as shown in Figure 5A as region E which is shown integrally formed with the aspheric lens in Figure 7 outside the diffractive structures.

In regard to claim 6, Yoo et al. discloses an objective lens for an optical pick-up as described in column 3, lines 19-20, at least one surface of said objective lens being an aspherical surface as shown in Figure 7, said at least one surface being divided into an effective area (353 in Figure 5A with 353 shown as integrally formed with aspheric lens in Figure 7) and an outer area (355 or region E in Figure 5A and shown integrally formed with aspheric lens in Figure 7) outside said effective area, a diffraction lens structure (see 353 in Figure 5A and as shown in Figure 7) being formed on said at least one surface within said effective area as described in column 6, lines 36-44, said outer area being connected with a base curve which is a macroscopic shape of said at least one surface within said effective area as shown in Figure 7 and as described in column 7, lines 12-19, said effective area and said outer area being formed such that the light beam passed through said effective area forming a beam spot on a predetermined surface, the light beam passed through said outer area being diffused on the predetermined surface as described in column 6, lines 1-7.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broome et al. U.S. Patent 6,088,322.

Regarding claims 3 and 4, Broome et al. discloses the invention as set forth above but does not teach an absolute value of said gap is equal to or greater than 10 micrometers or an absolute value of said gap is approximately 200 micrometers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the gaps having the specified values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo et al. U.S. Patent 6,043,912.

Regarding claims 3 and 4, Yoo et al. discloses the invention as set forth above but does not teach an absolute value of said gap is equal to or greater than 10 micrometers or an absolute value of said gap is approximately 200 micrometers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the gaps having the specified values, since it has been held that

discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (703) 306-0533. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7324 for regular communications and (703) 746-7324 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ava avg
April 8, 2002

Thong Nguyen
Primary Examiner